

**In the claims**

1. (Previously Presented) A method for inserting a digital media advertisement in a digital multiplexed stream, the method comprising:
  - computing a rate profile associated with a program stream;
  - compressing the digital media advertisement according to the computed rate profile; and
  - inserting the compressed digital media advertisement in the digital multiplexed stream at an advertising opportunity in the program stream.
2. (Previously Presented) The method of claim 1, wherein the rate profile is based on a predetermined bit rate.
3. (Previously Presented) The method of claim 2, wherein the predetermined bit rate profile comprises a maximum bit rate.
4. (Previously Presented) The method of claim 2, wherein the predetermined bit rate profile comprises a minimum bit rate.
5. (Previously Presented) The method of claim 2, wherein the predetermined bit rate profile comprises a start point and an end point.

6. (Previously Presented) The method of claim 2, wherein the predetermined bit rate profile comprises insertion instructions.

7. (Previously Presented) The method of claim 2, wherein the predetermined bit rate profile comprises a time varying profile from the start point to the end point.

8. (Previously Presented) The method of claim 7, wherein the time varying profile can be modeled as a piecewise linear model.

9. (Previously Presented) The method of claim 4, wherein one or more null packets are inserted such that the sum of the minimum bit rate and the one or more null packets is equal to the predetermined bit rate.

10-15. (Withdrawn)

16. (New) A method for inserting an advertisement into a statistically multiplexed stream, the method comprising:

computing a program stream rate profile for a program stream within a statistically multiplexed stream;

generating an avail rate profile for an avail within the program stream, wherein the avail rate profile is based on the program stream rate profile;

compressing an advertisement in accordance with the avail rate profile; and

inserting the compressed advertisement in the avail within program stream.

17. (New) The method of claim 16, wherein the avail rate profile includes a start point and an end point.

18. (New) The method of claim 16, wherein the avail rate profile includes at least some subset of a maximum bit rate and a minimum bit rate.

19. (New) The method of claim 16, wherein the avail rate profile is a time varying profile.

20. (New) The method of claim 16, wherein the avail rate profile is limited by the program stream rate profile.

21. (New) The method of claim 16, wherein the avail rate profile equals the program stream rate profile.

22. (New) The method of claim 16, wherein said inserting includes inserting the compressed advertisement and null packets in the avail within program stream such that

combined rate profile of the compressed advertisement and the null packets equals the program stream rate profile if the avail rate profile is less than program stream rate profile.

23. (New) The method of claim 16, wherein said

computing includes computing a first program stream rate profile for a first program stream within a statistically multiplexed stream and computing a second program stream rate profile for a second program stream within the statistically multiplexed stream;

generating includes generating a first avail rate profile for a first avail within the first program stream and a second avail rate profile for a second avail within the second program stream, wherein a combined first and second avail rate profile is based on a combined first and second program stream rate profile;

compressing a first advertisement and a second advertisement in accordance with the combined first and second avail rate profile; and

inserting the compressed first advertisement in the first avail and the second compressed advertisement in the second avail.

24. (New) The method of claim 23, wherein the combined first and second avail rate profile does not exceed the combined first and second program stream rate profile.

25. (New) The method of claim 24, wherein the first compressed advertisement may have a bit rate that exceeds bit rate of the first program stream.

26. (New) The method of claim 23, wherein said compressing includes compressing the first advertisement to a first advertisement rate profile and the second advertisement to a second advertisement rate profile, wherein the first advertisement rate profile is not limited by the first avail rate profile and the second advertisement rate profile is not limited by the second avail rate profile, and wherein a combined first advertisement and second advertisement rate profile is limited by the combined first and second avail rate profile.

27. (New) The method of claim 26, wherein the first advertisement rate profile has a lower bit rate portion when the second advertisement bit rate profile has a higher bit rate portion.

28. (New) The method of claim 26, wherein the first advertisement rate profile and the second advertisement bit rate profile stagger higher bit rate portions.

29. (New) A system for inserting an advertisement in a statistically multiplexed stream, the system comprising:

a rate profiler to determine a program stream rate profile associated with a program stream within a statistically multiplexed stream and an avail rate profile for an avail within the program stream;

a video compressor to compress an advertisement according to the avail rate profile; and

a video inserter to insert the compressed advertisement into the program stream.

30. (New) The system of claim 29, wherein the avail rate profile includes a start point and an end point.

31. (New) The system of claim 29, wherein the avail rate profile includes at least some subset of a maximum bit rate and a minimum bit rate.

32. (New) The system of claim 29, wherein the avail rate profile is a time varying profile.

33. (New) The system of claim 29, wherein said video inserter inserts the compressed advertisement and null packets in the avail within the program stream such that a combined rate profile of the compressed advertisement and the null packets equals the program stream rate profile if the avail rate profile is less than program stream rate profile.

34. (New) The system of claim 29, wherein said rate profiler determines a first program stream rate profile for a first program stream within the statistically multiplexed stream, a second program stream rate profile for a second program stream within the statistically multiplexed stream, a first avail rate profile for a first avail within the first program stream and a second avail rate profile for a second avail within the second program stream;

video compressor compresses a first advertisement and a second advertisement so that a rate profile associated with both the first advertisement and the second advertisement is in accordance with a combined first and second avail rate profile; and

video inserter inserts the compressed first advertisement in the first avail and the second compressed advertisement in the second avail.

35. (New) The system of claim 34, wherein the rate profile associated with both the first advertisement and the second advertisement does not exceed the combined first and second avail rate profile.

36. (New) The system of claim 34, wherein the first compressed advertisement may have a bit rate that exceeds the first avail rate profile.

37. (New) A method for inserting advertisements into a statistically multiplexed transmission stream containing a plurality of program streams with a plurality of advertising opportunities, the method comprising:

determining a first avail rate profile for a first avail within a first program stream, wherein the first avail rate profile is based at least in part on a first program stream rate profile for the first program stream;

determining a second avail rate profile for a second avail within a second program stream, wherein the second avail rate profile is based at least in part on a second program stream rate profile for the second program stream;

generating a composite avail rate profile based on the first avail rate profile and the second avail rate profile;

assigning a first advertisement rate profile to the first avail and a second advertisement rate profile to the second avail, wherein the first advertisement rate profile is not limited by the first avail rate profile and the second advertisement rate profile is not limited by the second avail rate profile, and wherein a combined first advertisement and second advertisement rate profile is limited by the composite avail rate profile;

compressing the first advertisement according to the first advertisement rate profile and the second advertisement according to the second advertisement rate profile; and

inserting the compressed first advertisement in the first avail and the second advertisement in the second avail.

38. (New) The method of claim 37, wherein the composite avail rate profile specifies the instantaneous sum of the first avail rate profile and the second avail rate profile.

39. (New) The method of claim 37, wherein the first advertisement rate profile is complementary with the second advertisement rate profile.

40. (New) The method of claim 37, wherein the first advertisement rate profile has a first high advertisement rate portion, the second bit rate profile has a second high bit rate portion, and the first high bit rate portion and the second high bit rate portion are staggered



41. (New) The method of claim 37, wherein the first avail and the second avail at least partially overlap in time.

42. (New) The method of claim 37, wherein the first avail and the second avail are simultaneous in time.

43. (New) A system for inserting advertisements into a statistically multiplexed transmission stream containing a plurality of program streams with a plurality of advertising opportunities, the system comprising:

a statistical multiplexer capable of determining a first avail rate profile for a first avail within a first program stream and a second avail rate profile for a second avail within a second program stream;

a video compressor capable of compressing a first advertisement and a second advertisement at an aggregate rate profile which is less than or equal to sum of the first avail rate profile and the second avail rate profile; and

a video inserter capable of inserting the compressed first advertisement in the first avail and the second compressed advertisement in the second avail.

44. (New) The system of claim 43, wherein said video compressor compresses the first advertisement at the first avail rate profile and the second advertisement at the second avail rate profile that is complementary with the first avail rate profile.